

**CRITERIA FOR AN EFFECTIVE MEMPHIS FIRE DEPARTMENT PHYSICAL
FITNESS PROGRAM**

EXECUTIVE DEVELOPMENT

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ABSTRACT

The problem was that no effective physical fitness program was in place for Memphis Fire Department employees. The purpose of this applied research project was to establish minimum criteria to be used in the development of a physical fitness program for the Memphis Fire Department. Action research was utilized to answer the following research questions:

1. Should participation in a physical fitness program be mandatory or voluntary for Memphis Fire Department employees?
2. What benefits should the Memphis Fire Department and its employees recognize from a physical fitness program?
3. Is a physical fitness program enough to ensure firefighter health and well being for Memphis Fire Department employees?
4. Are there any nationally established criteria that should be considered in developing a physical fitness program for the Memphis Fire Department?

Procedures for this project included a literature review of fire service magazine article, journal articles, research papers, and textbooks. The source material dated mostly from 1995 to the present. The literature review was conducted at the Learning Resource Center at the National Fire Academy in June 1999 and at home at the Memphis Fire Department Training Library and the local public library.

Results of this applied research project showed that there were national standards already available establishing criteria for developing an effective physical fitness program. There was also an IAFF Wellness/Fitness Initiative in place by the IAFF, IAFC, and ten national fire departments as a joint labor and management effort to implement an effective national wellness/fitness program. Research showed that physical fitness benefits both the employee as

well as the employer. The ten national departments mentioned above were trying the program the group had put together and compiling data to measure its effects on the employees and employers.

It was the recommendation of this project that the NFPA 1500, *Standard on Fire Department Occupational Safety and Health Programs* be adopted by the Memphis Fire Department in developing its physical fitness program. In addition, it was recommended that the *IAFF Wellness/Fitness Initiative* be studied to ensure that the Memphis Fire Department has a complete fitness/wellness program developed and that all national standards were followed.

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INTRODUCTION

Fire fighting continues to be one of the most hazardous occupations in the United States. It is a physically demanding and highly stressful occupation. Firefighters often work under extreme weather conditions and in highly dangerous environments. There have been advances made in equipment and procedures made which appear to be reducing the number of firefighter injuries and deaths. Improved protective clothing, safer apparatus, better training, and improved incident management have helped to reduce the injuries and deaths. In the Memphis Fire Department we have purchased the best protective clothing, purchased the newest apparatus, and continuously improve our training. All of our employees are trained and well versed in the incident command system.

The problem is that the Memphis Fire Department does not currently have an effective physical fitness program for their employees. The program the department has in place now is mandatory, but is not enforced, it has few employees participating, and produces little or no results that can be measured. If you look around the department you will find employees that are overweight, suffer from hypertension, and other medical problems. These employees cost the city money in medical costs, overtime, and sick leave. They are less productive and a danger to other employees working on the scene of a fire or other emergencies.

The purpose of this paper is to establish minimum criteria needed to create and implement an effective physical fitness program.

The action method of research is used for this paper. The specific research questions that are addressed:

1. Should participation in a physical fitness program be mandatory or voluntary for Memphis Fire Department employees?

2. What benefits should the Memphis Fire Department and its employees recognize from a physical fitness program?
3. Is a physical fitness program enough to ensure firefighter health and well being for Memphis Fire Department employees?
4. Are there any nationally established criteria that should be considered in developing a physical fitness program for the Memphis Fire Department?

BACKGROUND AND SIGNIFICANCE

The Memphis Fire Department has been using some type of physical fitness program with all recruit classes for the last twenty-five years. The program used during recruit training is similar to that of a high school football program. It consists of flexibility and warm-up exercises, conditioning exercises, limited cardiovascular exercises, and when time permits, strength training. Department regulations require that members maintain the necessary degree of physical fitness to perform the required duties of their position and participate in physical fitness training. Once recruits leave the Training Academy, their physical fitness training usually stops unless they are individually motivated or influenced by someone in the field.

The basic duties of a firefighter require physical performance calling for above-average ability, endurance, and superior conditioning. This includes occasional demand for extraordinary strenuous activities at emergencies. Firefighters work under adverse environmental conditions over extended periods of time. Which include running, walking, climbing, jumping, twisting, bending, and lifting weight over twenty-five pounds. The pace of work is usually set by the emergency situation.

The NFPA has recognized for some time the physical demands placed on firefighters. In NFPA 1500, Section 8-3 states “that departments should establish and provide a mandatory fitness program under the medical supervision of a department physician” (Davis, 1995, p.22). If you stop and think about it most departments spend millions of dollars on protective clothing, apparatus, maintenance, special tools, and training. How much do they spend on the employees who use this equipment to keep them in top physical condition?

In 1997, the International Association of Fire Fighters and the International Association of Fire Chiefs, along with ten departments nationwide formed The Fire Service Joint Labor Management Wellness/Fitness Initiative. Their purpose was to develop a wellness/fitness program that would address health and physical fitness problems in the fire service and establish a database of information regarding training methods and results to be used for establishing standards nationally. At the IAFF 15th Redmond Symposium in Honolulu, HI, in August of this year discussion was began on how to implement this new initiative (International Fire Fighter, 1999, p.13).

LITERATURE REVIEW

It took the American Association of Health, Physical Education, Recreation and Dance six years to agree on a definition of physical fitness. The result was the identification of the following components: cardiovascular-respiratory endurance, muscular strength and endurance, flexibility, and body composition, (Davis, 1995, p.23). At just about this time in history, we should be approaching some consensus that being physically fit is an essential occupational requirement (Davis, 1996, p.32). If the need for firefighters to be physically fit is so obvious and so important to job performance, why are there not more mandatory fitness programs in fire

department (Goodson, 1994, p.22). The reasons vary for departments. First, the governing body, those who control the purse strings, may be reluctant to make the initial investment in exercise equipment for the stations, education, and training for firefighters and fitness coordinators (Goodson, 1994, p.22). The local firefighter's union may oppose a fitness program because they view some part of the program as a threat to their employees continued employment. Finally, the department head may not want to provide on-duty time for firefighters to exercise, when they could be doing other activities that he views as more important.

Firefighters must be ready day or night to go from a state of relaxation, even deep sleep, to performing at full speed. The long-term physical effects of this way of functioning have not seen adequate study, but it does not take much imagination to see the connection between this type of stress and the statistics on firefighter mortality and the rest of the adult population (Goodson, 1994, p.19). Fire fighting is a very demanding occupation that requires more strength and stamina than any other vocation. It certainly requires a higher level of physical fitness than any other career field. A fire department fitness program should have the following goals: enhance employee health, improve employee performance and productivity, and increase employee moral (Davis, 1996, p 32). The decision to embark on a regular program of physical fitness should be a conscious one, made by an informed work force. Participation must occur from top management on down. Employees at the bottom of the organizational ladder will resent the program if some individuals are excused from participating. An overall wellness/fitness program must be developed to maintain fire fighters physical and mental capabilities and should be the objective of every fire department in cooperation with its local IAFF affiliate (IAFF, 1997).

Research Question # 1

Should participation in a physical fitness program be mandatory or voluntary for Memphis Fire Department employees?

The NFPA 1500, Section 8-3.1 states that “The fire department shall establish and provide a physical fitness program to enable members to develop and maintain an appropriate level of fitness to safely perform their assigned functions” (NFPA, 1997). Section 8-3.2 states that “the fire department shall require the structured participation of all members in the physical fitness program” (NFPA, 1997). Any program of physical fitness must be positive and not punitive in design and require mandatory participation by all uniformed personnel in the department once implemented (IAFF, 1997) . The program should make allowances for age, gender, and position in the department. It should allow for on-duty participation utilizing facilities and equipment provided or arranged for by the department. Research has shown the need for high levels of aerobic fitness, muscular endurance, and muscular strength to perform safely and effectively in the fire service (IAFF, 1997, p. 43). Fitness must be incorporated into the overall fire service philosophy. Basically, if you are not devoting an hour per shift, or twenty minutes per day, then you are probably not on a program that produces a meaningful impact on job-related fitness (Davis, 1996, p. 32). The most significant engineering modification that will have an immediate effect on our work capacity is improved fitness levels (Lepere, 1997, p.53). Firefighters owe it to themselves, their families, their fellow firefighters, and certainly to the taxpayers whom they are sworn to protect, to achieve and maintain the highest level of physical fitness possible (Goodson, 1994, p.19). The key to a successful program will depend on middle management’s buy-in of the program. These are the supervisors who have daily contact with the

first responders, Emergency Medical Technician's, firefighters, and paramedics, and the ones who are in the best position to promote and evaluate the fitness program (Lepere, 1997, p.20).

Research Question # 2

What benefits should the Memphis Fire Department and its employees recognize when it implements a physical fitness program?

A department fitness program should be viewed as employee assistance, aimed at general health, well being, and injury prevention. Clearly, your productive years are enhanced by adoption of positive behaviors, in which case we both win. The employee enjoys an enhanced quality of life, and the employer has a more productive member of the workforce (Davis & LeCuyer, 1995, p.23). An effective program should realize significant cost savings in lost work time, workers compensation, and disability (IAFF, 1997, p. 5). Benefits will come in the form of reduced health care, reduced worker's compensation and disability costs, decreased sick time, improved morale and self-esteem, and increased flexibility, strength and endurance (Lepere, 1997, p. 54). It is well known that approximately 50% of all firefighter fatalities are stress related. More than two-thirds of the stress-related fatalities occur in individuals with preexisting medical problems or prior heart attacks who did nothing about them (Lepere, 1997, p.55). The firefighters' long hours, shift work, sporadic high intensity work, strong emotional involvement, and exposure to human suffering places fire fighting among the most stressful occupations in the world (IAFF, 1997, p. 3). High levels of stress, intense physical demands, and long term exposure to chemicals and infectious disease contribute to heart disease, lung disease and cancer, the three leading causes of death and occupational disease disability (IAFF, 1997, p. 3). Fire departments with members who are medically, physically, and mentally fit will provide better

service to their communities year after year while realizing reductions in disability retirements by their uniformed personnel (IAFF, 1997, p. 5).

Research Question # 3

Is a physical fitness program enough to ensure firefighter health and well being for Memphis Fire Department employees?

A health education program should be a part of the department's human resource equation for enhanced morale, performance, and overall well being (Davis, 1995, p.23). Wellness is a comprehensive term that includes all of the following: medical fitness, physical fitness, emotional fitness, and access to rehabilitation when indicated (IAFF, 1997, p. 2). A wellness program is not just another program, it is a total commitment to the health, safety, and longevity of all uniformed personnel, the productivity and performance of all fire crews, and the cost effectiveness and welfare of all fire departments. Wellness is a personal commitment that all uniformed personnel must make to survive and sustain a career in the professional fire service (IAFF, 1997, p. 3). Health education is important to any physical fitness program. Health issues that can be addressed are weight control, nutrition, cholesterol control, tobacco cessation, stress management, hypertension, and many others (IAFF, 1997, p. 73).

Research Question # 4

Are there any nationally established criteria that should be considered in developing a physical fitness program for the Memphis Fire Department?

Organizations complying with NFPA 1500 should have a program in place to address the health-related issues of firefighters. All the necessary information for developing a basic fitness

program is provided in NFPA 1500 (Davis, 1995, p.23). NFPA 1500, Section 8-3 states that “departments should establish and provide a mandatory fitness program under the medical supervision of a department physician (NFPA, 1997). The intent is to maintain an appropriate level of fitness and reduce the probability and severity of injury and illness (Davis, 1995, p.22). According to NFPA 1500, “the fire department shall develop physical performance requirements for candidates and members who engage in emergency operations” (NFPA, 1997). “Members who engage in emergency operations shall be annually evaluated and certified by the fire department as meeting the physical performance requirements established”(NFPA, 1997). NFPA 1500, requires that the fire department have an officially designated physician who shall be responsible for guiding, directing, and advising the members with regard to their health, fitness, and suitability for various duties (NFPA, 1997). In addition to the fire department physician, NFPA 1500, requires that a fitness and health coordinator be in place to assist the fire department physician in implementing the fitness program (NFPA, 1997). The IAFF and the IAFC along with ten other departments took the advice of the NFPA in developing The Fire Service Joint Labor Management Wellness/Fitness Initiative which is based on standards developed by the NFPA (IAFF, 1997). The NFPA 1500, Standard on Fire Department Occupational Safety and Health Program, the NFPA 1582, Standard on Medical Requirements for Fire Fighters, and the proposed NFPA 1583, Recommended Practice: Firefighter Physical Performance Assessment all address key criteria that should be included in a physical fitness program. The only problem faced by the employees of the Memphis Fire Department is that the standards are not federally required.

PROCEDURES

Definitions of Terms

Fire Service Joint Labor Management Wellness/Fitness Initiative – A group effort between the IAFF, IAFC, and ten national departments of various sizes to develop a national wellness/fitness program.

International Association of Fire Chiefs (IAFC) – International Association of chief fire officers who meet and discuss issues which effect all departments.

International Association of Fire Fighters (IAFF) – International organization for fire fighters working to improve benefits, health, and safety issues.

Learning Resource Center (LRC) – Library found on the campus of the National Fire Academy.

National Fire Protection Association (NFPA) – A nonprofit organization that researches and formulates consensus standards for public and private fire protection agencies. The NFPA is not a Federal Agency and its standards and codes are not enforceable unless adopted by an authority in a particular jurisdiction.

National Fire Academy (NFA) – Federal institute working to improve firefighter safety, education, and development through training and practical applications of materials and concepts.

Limitations

Limitations included limited resource material available at the Learning Resource Center related to fire service physical fitness programs. Presently studies are being conducted by several departments across the country but they have yet produced sufficient data to compare fitness

program results. Several private companies offer fitness programs and fitness evaluations, however; they would only release data and program material if you were interested in purchasing their programs. Several departments were contacted by telephone and by Internet E - Mail, but they seemed reluctant at best to release data or had no data to release.

Research Methodology

The type of research used in this project is the action research methodology. The problem statement was reevaluated for accurateness and clarity and found to be sufficient. The goal of this research is to establish minimum criteria for the development of an effective physical fitness program for the Memphis Fire Department. There did not appear to be any causal contributing factors. Literature searches were conducted at the Learning Resource Center in June 1999, while attending the Executive Development class at the National Fire Academy. Additional searches were conducted at the Memphis Fire Department Training Academy Library in Memphis and at the local public library. National standards, magazine articles, journal articles, research papers, and textbooks were reviewed. Source material dates from 1990 (Memphis Fire Department Physical Fitness Manual) to present. Most of the material used was from 1995 and later. The International Association of Fire Fighters local # 1784 provided the writer with a copy of the book, *Fire Service Joint Labor Management Wellness/Fitness Initiative* which proved to be very valuable. The outcome of the literature review yielded positive answers to my four research questions. Minimal criteria, for an effective fire department physical fitness program was created through analyzing the current initiatives being explored in the areas of physical fitness and wellness.

RESULTS

Answers to Research Questions

Should participation in a physical fitness program be mandatory or voluntary for Memphis Fire Department employees?

The research shows that the National Fire Protection Association recommends the structured participation of all members in the physical fitness program. The International Association of Fire Fighters also recommends mandatory participation in a physical fitness program for all employees. The International Association of Fire Fighters and the International Association of Fire Chiefs, along with ten nationwide departments suggest that mandatory participation is the only way to guarantee participation by all employees.

What benefits should the Memphis Fire Department and its employees recognize from implementing a physical fitness program?

According to my research a department fitness program should be viewed as employee assistance, aimed at the general health, well being, and injury prevention of its employees. The employee should enjoy an enhance quality of life from participation and the employer gains a more productive member of the workforce. Significant cost savings in lost work time, workers compensation, and disability should be recognized. Reduced health care costs, decreased sick time, improved morale and increased self-esteem should also be observed. Levels of stress should also be reduced. Overall the department will benefit from a healthier workforce and the employee will benefit from better health.

Is a physical fitness program enough to ensure firefighter health and well being for Memphis Fire Department employees?

The physical fitness program is just the first step in the overall fitness of department employees. In order for the program to be effective we must include health education. This health education should include classes on behavioral modifications, nutrition, and general wellness issues. Physical fitness is an important first step that requires constant maintenance to achieve overall performance results. The program takes a personal commitment from management as well as the employees.

Are there any nationally established criteria that should be considered in developing a physical fitness program for the Memphis Fire Department?

The National Fire Protection Association 1500 Standard on Fire Department Occupational Safety and Health Programs offers all of the information to develop and implement a basic physical fitness program. The standard covers everything from selecting a fire department physician to maintaining individual medical records for each employee. The International Association of Fire Fighters Fire Service Joint Labor Management Wellness/Fitness Initiative contains information complied by both the IAFF and the International Association of Fire Chiefs. This book breaks down the information needed to set up a program into different components such as medical, fitness, rehabilitation, behavioral health, and data collection. The book also includes medical protocols, fitness protocols, and resource material.

DISCUSSION

Currently the Memphis Fire Department has a fitness program that according to research does not measure up to national standards. Even though we have a program in place it is inadequate at best. The National Fire Protection Association has developed consensus standards that explain each element of a comprehensive physical fitness program. Due to budget constraints or personal reasons the department has not come to the realization that a sound physical fitness program benefits everyone. Based on my observations it is true that too many firefighters are terribly out of shape. Many are overweight, lack upper-body strength, lack stamina and endurance, and consume diets that are too high in fat. Throw in the stress, high cholesterol, and tobacco products and you have a recipe for bad health and future health problems. The IAFF, IAFC, and ten departments nationally recognized the problem and came up with the Wellness/Fitness Initiative. It is time that we adopt this initiative and improve the health of our employees and save the taxpayers unneeded expense. Members of the public have no way of knowing whether they are getting superior or inferior emergency service from their fire department, but those who are doing the job know the difference. The employees who are grossly out of shape perform marginally at best and are a liability at the emergency scene. They are only able to continue doing the job because their stronger, fitter counterparts make up for their marginal performance and because it is often difficult the difference between acceptable performance and poor performance on the fire ground. A high level of physical fitness is absolutely essential for firefighters to be able to do their jobs safely and effectively, and it is as much a part of the job as training to fight fires or performs extrication.

RECOMMENDATIONS

Based on the literature review, discussion, and results the following recommendations are derived from this research.

1. Adopt the National Fire Protection Association 1500 Standard and follow its recommendations for establishing a physical fitness program.
2. Review the International Association of Fire Fighters Wellness/Fitness Initiative and determine if it addresses any areas not addressed in NFPA 1500, and if so include those areas into a total fitness program.
3. Meet with the Union and explain our plans and gain their support.
4. Meet with middle management and explain our plans and gain their support.
5. Meet with our budget people and city leaders and show them the importance of the program and find ways to budget money for its implementation.
6. Select a fire department physician that meets NFPA requirements.
7. Select and train a fitness coordinator to work with the fire department physician in implementing the program.
8. Form a committee of members from labor and management to work with the fitness coordinator and the fire department physician.
9. Establish performance standards that everyone should meet regularly, based on age, gender, and sex.
10. Give all employees a pre-fitness medical evaluation.
11. Begin the program and fix problems encountered as they occur instead of trashing the program.

12. Include nutritional education given by a licensed nutritionist.
13. Evaluate our program at the end of one year and determine based on the records kept if we are meeting our goals.
14. Re-evaluate employee's medical conditions and determines if employees are meeting performance standards.

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APPENDIX A

Minimal Physical Fitness Program Requirements

The research suggests that the minimal requirements for an effective physical fitness program should be:

1. The fire department shall obtain the services of a licensed doctor of medicine or osteopathy (NFPA 1582).
2. The fire department shall obtain the services of a health and fitness coordinator who shall act as a direct liaison between the fire department physician and the fire department (NFPA 1500).
3. The fire department will medically evaluate all employees to determine their current health and fitness levels.
4. The fire department will establish performance standards for all candidates and current firefighters.
5. The fire department will require the structured participation of all employees in the program.
6. The fire department will annually evaluate and certify all candidates and current firefighters.
7. The fire department will establish and provide a physical fitness program to enable members to develop and maintain an appropriate level of fitness to safely perform their assigned functions.
8. The fire department will provide adequate equipment to furnish aerobic, cardiovascular, and strength training in each station in a well-lighted and well-ventilated area.

9. The fire department will provide on-duty time for physical fitness training.
10. The fire department will regularly check all employees to assure they are participating in the program.
11. The fire department will provide rehabilitation for those who need it to meet the established performance standards because of injury or illness.
12. The fire department will keep individual and confidential medical records on all employees showing progress, illness, exposures, etc.
13. The fire department will compile data to show the benefits of the program to employees and the department.
14. The fire department will not punish any employee who does not meet performance standards, but will assist them in meeting the standards.
15. The fire department will not release medical record information without written permission from the employee.